

THE GENUS *OBEREA* MULSANT (COLEOPTERA:
CERAMBYCIDAE) WITH NOTES ON THE TAXONOMY,
VARIATION, AND HOST-AFFINITIES OF MANY
OF THE SPECIES

By STANTON D. HICKS¹

It is so rightly stated in the introduction of the first fascicle of *The Beetles Of The United States* (Arnett, 1960) that "Ecological information about beetles is distressingly limited." As a contribution to this neglected field, I offer below facts and observations that I have made over the years on many species of *Oberea*. The genus is poorly understood taxonomically and it is my feeling that this is largely because so few of the life-histories and host preferences are understood, plus the fact that many of the species are so variable in color. In an effort to solve at least part of the problem I borrowed material from several institutions, United States National Museum, American Museum of Natural History, New York State Museum, Illinois State Natural History Survey, Iowa Wesleyan College, Ontario Agricultural College, Royal Ontario Museum, and two Canadian entomology laboratories. These specimens supplemented those contained in the Canadian National Collection (CNC) and my own private collection, now presented to the Canadian National Collection. In addition I made numerous observations in the field and sought by other means as well to clarify the habits and food preferences of these beetles. The data assembled, mostly pertaining to species of Eastern North America, soon showed that many published records and opinions were in error.

The present contribution does not pretend to comprise a comprehensive review, but it will, I hope, clarify a number of taxonomic questions, and pave the way for a more complete analysis. *Oberea brooksi* Wallis is reduced to synonymy under *O. oculaticollis* (Say); no other changes in status are proposed.

The problem of resolving the species of *Oberea* appears to be similar to and as difficult as that experienced by Brown (1956) in his study of *Chrysomela*, even though sibling species do not appear to be involved. However, there are forms with very close superficial resemblance which may well have the same host and sibling affinity. The larvae of *Oberea* species are live stem borers not easily discovered in many cases in their specific hosts. This is exemplified by *Oberea tripunctata* (Swed.), taxonomically identifiable, and easy to collect in the adult stage, yet with no host record in literature or on specimens. As one sweeps or hand picks adult leaf beetles, it is usually possible to relate the discovery of the first few to their host by critical observation in the immediate area, especially if there are larval or pupal stages on the leaves. It is not as easy to find

¹ Entomology Research Institute, Research Branch, Canada Department of Agriculture, Ottawa, Ontario.

the host of a species of *Oberea* by the girdling of stem or twig and the resultant wilting of the leaves, unless an abundant colony of adults is present. It seems probable, therefore, that at least several species will only be properly understood by field study.

When the species are better understood it may be possible to prepare a key using pronotal structure and color. Specimens can be sorted to immaculate, bimatulate, and quadrimaculate groups by the presence or absence of colored pronotal callosities. However, it was found that body color in general is a variable, undependable factor in many species; morphological characters within these groups are often unsatisfactory, and the median lobes of male genitalia of easily separated species are too similar to be useful.

The following is a list of 21 species with notes to support their validity. The specimens were checked with the original descriptions and in some cases compared with the types and cotypes. It is hoped that these data will serve as a foundation for future interest in this genus of the Cerambycidae.

IMMACULATE GROUP

(Callosities absent, pronotum light)

Oberea gracilis (Fab.). Length 11 to 15 mm. Easily separated from the only other species in this group by the general yellowish-brown colour, the black stripe on each side of the elytra, and the size which is about half that of *ruficollis*. Records: 6 specimens are in the C.N.C. from Sherborn (1), Massachusetts; Sanford (1) and Enterprise (2), Florida; and locality (?) (2). Host: not known.

Oberea ruficollis (Fab.). Length 16 to 19 mm. The largest of any *Oberea*, this species has a mat of fine, gray pubescence on the black elytra which contrasts with the reddish-orange head and thorax. Records: 11 specimens are in the C.N.C. from Clark's Valley (2), Harrisburg (1), Hummelstown (1), and Pike County (1), Pennsylvania; Leamington (1), Ontario; Highlands (2), North Carolina; Satola (1), Georgia; and locality (?) (2). Host: larva in the stem and root of young living sassafras (Craighead, 1923).

BIMACULATE GROUP

(Callosities 2, pale)

(Callosities 2, dark)

Oberea affinis Leng. Length 11 to 13 mm. The only species in the group with the callosities pale, the same color as the pronotum. This is the common pest of raspberry and blackberry plantations and can be collected anywhere within a radius of thirty miles of Ottawa. I have seen specimens morphologically similar but with two black callosities; these range from Maine to New Jersey and west to Wisconsin and Manitoba. Authors have used the name *bimatulata* in the literature for these two forms for many years. Further I have seen forms from New York State that appear to be

intermediates in the maculation on the thorax. It needs to be established whether or not there is a cline from north to south that connects these forms. Records: 156 specimens are in the C.N.C. from localities in the eastern townships of Ontario, southwestern Quebec, and south to Tennessee and west to Windsor, Ontario. Host: many adults were reared from larvae in the stems and crowns of raspberry and blackberry (*Rubus* spp.).

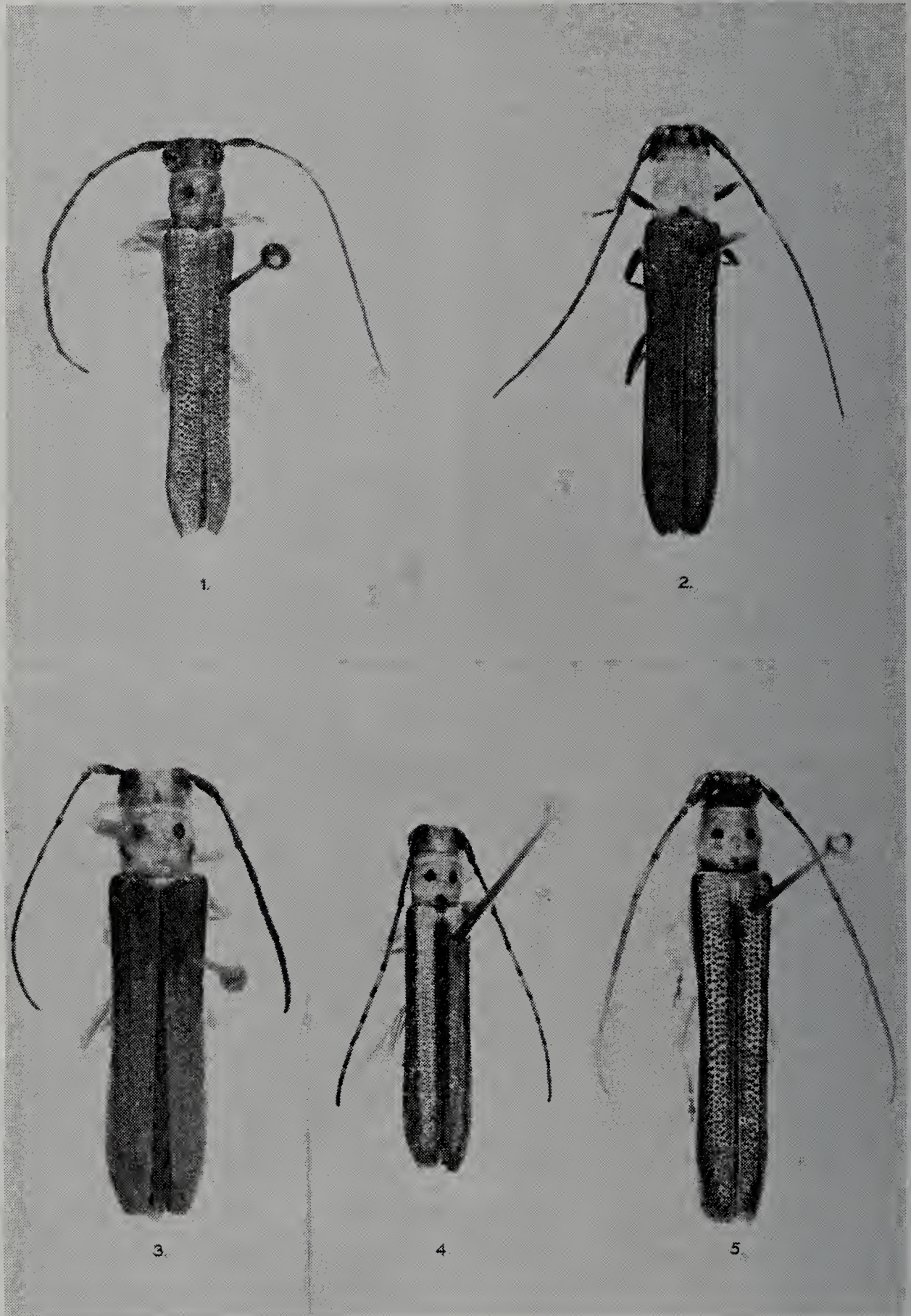
There seems to be no possibility of locating Olivier's type specimen of *Oberea bimaculata* for study. Olivier stated that he had found this beetle in the Var region (southern France). According to Mr. A. Descarpentries of the Paris Museum it is not in their collection. Further, no French species satisfies the original description. There is no reason to believe that the type was American, although Gemminger and Harold and subsequent authors restrict the name to the American form. Therefore, it is probably best to consider *bimaculata* as an unidentifiable species.

Authors have also misused the name *bimaculata* for similar and smaller forms in this group. The major problem is a proper understanding of many of Casey's names *intermedia*, *delicatula*, *filum*, *iowensis*, *insignis*, *umbra dolosa* and *plagiata*. Other names to be considered are *mandarina* of Fabricius, *amabilis* and *tibialis* of Haldeman, and *basilis* of LeConte. These are names applied to closely allied and variable forms based only on one or two specimens in many cases.

Oberea tripunctata (Swed.). Length 9 to 13 mm. The commonest of several yellow and black-striped species in this group and almost as easy to collect as *affinis*. Specimens have yellow to black heads, scutellum and pre-scutellar spot black, and annulated antennae. Records: 173 specimens in the C.N.C. show the same general range as *affinis*. Host: not known.

Oberea praelonga Csy. Length 9 to 13 mm. Some of our specimens have been compared with the cotypes by Mr. William Haliburton of the former Division of Forest Biology, Science Service, Department of Agriculture, Ottawa, Canada. Although similar in appearance to *tripunctata*, it can be easily separated by the consistently black head (with pale basal collar), pale scutellum, and pre-scutellar dark spot which varies from an almost obsolete to a dark color. Records: 49 specimens are in the C.N.C. from Bells Corners (25), City View (1), Ancaster (3), Pt. Pelee (2), Campden (1), Marmora (1), Prince Edward County (1), Britannia (Carleton County (1)), Addington-Lennox County (1), Ontario; northeast side of the Champlain Bridge (2), Point Gatineau (1), Harrington Lake (8), Hull (1), Quebec; and Sherborn (1), Massachusetts. Host: several adults have been reared from larvae in the tips of stems of *Cornus stolonifera* Michx.

Oberea appalachiana Csy. Length 10 to 14 mm. Very closely allied to *praelonga*, but in general more robust. It appears to be a good species on the basis of identification in 1945 by Mr. W. S. Fisher, formerly with the Bureau of Entomology, United States Department of Agriculture, and by the fact that it has a different host. Records: 5 specimens are in the C.N.C. from Windsor (1), Westport (1), and Leamington (1), Ontario; and St. Stephen (2), New Brunswick. Host: the two specimens from Westport and Leamington were reared from larvae in twigs of elm (*Ulmus* sp.) by Mr. Haliburton.



The *Oberea* of the Ottawa District, Ontario, Canada. The species are as follows: FIG. 1, *O. pallida* Csy.; FIG. 2, *O. affinis* Leng; FIG. 3, *O. schaumii* LeC.; FIG. 4, *O. tripunctata* (Swed.); FIG. 5, *O. praelonga* Csy.

Oberea deficiens Csy. Length 14 mm. Closely allied to *praelonga* and *appalachiana*, this species is generally paler and has an entirely pale head. It also has a different host. Mr. Haliburton compared a specimen with the type. Records: 4 specimens are in the C.N.C. from Kitchener (1), Leamington (1), and Ivy Lea (2), Ontario. Host: the two specimens from Ivy Lea were reared from larvae in stems of *Viburnum* sp. by Mr. Haliburton.

Oberea ulmicola Chitt. Length 9 to 13 mm. (Webster, 1904). The writer has examined a series of 28 paratypes from the Illinois Natural History Survey Collection. The head is always black; the antennae are always dark, with no indication of annulation; the scutellum is always pale, and the pre-scutellar spot is either very small or lacking. This species has a purplish bloom on the elytra owing to the color combination of fine white hairs and brownish-black elytra. It is unlike any other bimaculate species. Since it was collected in great number at Decatur, Illinois, where it bred in the twigs of elm, there can be no doubt as to its validity. Records: 1 specimen is in the C.N.C. from the type locality Decatur, Illinois. Host: many specimens were reared by Mr. E. S. G. Titus and Mr. F. M. Webster from larvae in twigs of the American elm, *Ulmus americana* L.

Oberea pallida Csy. Length 11 to 13 mm. It is easy to recognize this species. The head, antennae, thorax, scutellum, elytra, and abdomen are a light yellowish-brown. The callosities and pre-scutellar spot vary from very light brown to black. Specimens were compared with the cotypes by Mr. Haliburton. Records: 8 specimens are in the C.N.C. from Marmora (1) and Hastings County (1), Ontario; Beech Grove (1), Berthierville (1) and Harrington Lake (Gatineau Park (1)), Quebec; Aweme (1) and Berens River (1), Manitoba; and Monmouth (1), Maine. Host: recorded as breeding in alder in Pennsylvania (Knull, 1946), the Maine specimen bears a label, "beating *Alnus*," and the author has collected one specimen on an isolated alder shrub.

Oberea exilis Csy. Length 9 mm. A small, slender, blackish-brown species with dark antennae. The head is black, with a pale band extending across the face between the clypeus and the labrum. The callosities are large, shiny, and black, and are centrally located on a yellowish thorax with dark base and sides. One specimen was compared with the cotypes by Mr. Haliburton. Records: 1 specimen is in the C.N.C. from Roseland, Ontario. Host: not known.

Oberea flavipes Hald. Length 10 to 11 mm. A small series I have seen exhibits a distinctive general color pattern. The brownish-yellow elytra are paler at the base around the dark scutellum and slightly darker along the sides. This contrasts with the brownish-black abdomen, prosternum, and pronotum. The head is black and the legs from femora to tarsi are entirely yellow. Records: 2 specimens from Maryland are in the C.N.C. and other specimens examined were from the same state. Host: the larva feeds in the stems of *Phlox* (Craighead, 1923).

Oberea oculaticollis (Say). Length 13 to 14 mm. A robust, almost entirely black species covered completely with a fine, silvery mat of hairs. The antennae and legs are blackish-brown. It can be distinguished easily from any other species in the three groups. Mr. Haliburton has compared

one Ontario specimen with specimens in the United States National Museum and the LeConte Collection. Two other specimens, the female type and the female paratype of *brooksi* Wallis from Manitoba, are identical with the Ontario specimen and agree with Say's original description. Mr. J. B. Wallis' name will have to go into synonymy. Records: 3 specimens are in the C.N.C. from Ojibway (1), Ontario, and Transcona (2), Manitoba (the ones referred to above). Host: not known.

Oberea myops Hald. Length 15 to 18 mm. A large species, averaging slightly smaller in size than *ruficollis*. Primarily a yellowish-orange, specimens examined exhibit a faint to a more noticeable sutural dark stripe which begins just beyond the pale scutellum, a heavier dark stripe along the sides which almost reaches the apex, dark antennae, and bicolored legs. Mr. W. Haliburton has compared a specimen with the type. Records: 4 specimens are in the C.N.C. from Franklin (1), North Carolina; Satolah (1), Georgia; Jamaica (1), Long Island, New York; and locality ? (1). Host: larvae have been found only in *Rhododendron* and related shrubs (Craighead, 1923).

Oberea ocellata Hald. Length 11 to 15 mm. A striking species, easily recognized by contrasting orange and black. The head, thorax, and abdomen are orange. The elytra (covered with a mat of fine, silvery hairs) and antennae are blackish. The legs are bicolored. Mr. W. S. Fisher identified one of our specimens in 1945 as *ocellata*. Records: 8 specimens are in the C.N.C. from Roseland (1), Ontario; Hummelstown (2), Pennsylvania; Moshola (1) and New Rochelle (1), New York; Framingham (1), Massachusetts; Lawrence (1), Kansas; and Williamsville (1), Missouri. Host: the larva has been found in two species of *Rhus* (Craighead, 1923).

Oberea ocellata discoidea LeC. Length 11 to 15 mm. Specimens examined average the same size and have the same basic color pattern as typical *ocellata*. However, the two forms can be easily separated by the consistently noticeable maculae on the head and thorax. There are two large, oval, black spots barely separated by the median line on the vertex of the head. Two larger black spots surround the callosities and join at the median line on the thorax. I have seen no intergrades. Records: 4 specimens are in the C.N.C. from Lakeland (2) and Gainesville (1), Florida, and locality ? (1). Host: unknown.

QUADRIMACULATE GROUP

(Callosities 4, dark)

Oberea delongi Knull. Length 8 to 12 mm. The author collected a considerable series of adults from one host at one locality on three occasions. The series agrees with the description of Knull (1946) in which he recognized a short, slender (prefer robust) form showing great variability in color. This is a dark species with yellow legs. The color variation is strikingly sexual and individual. Males have the labrum, clypeus, and frons pale and the vertex variably pale to black. The elytra have a short, yellow outer margin starting at the base. The last two ventral segments of the abdomen are variably pale. Females have a greater degree of color con-

trast in all these parts. Female heads are almost entirely pale, the pale outer margin of the elytra is more pronounced, and the last two ventral segments and the pygidium are yellow. Records: 41 specimens are in the C.N.C. from Roseland (34), Tecumseh (1), Windsor (2), and Point Pelee (1), Ontario; Montreal Island (1), Quebec; Chicopee (1), Massachusetts; and Lawrence (1), Kansas. Host: numerous adults were collected on seedlings and mature trees of *Populus deltoides* Marsh. at Roseland, Ontario.

Oberea schaumii LeC. Length 13 to 16 mm. The head varies from entirely orange to almost black in this species. The prothorax and prosternum are orange except for a basal, lateral black spot. The greater part of the ventral surface of the abdomen is orange. Each elytron has an orange outer margin which does not reach the apex. There may or may not be a pale area around the pale scutellum. Otherwise, the elytra are brownish-black with a mat of short, recumbent, silvery pubescence. The elytral apices are truncate. Records: 17 specimens are in the C.N.C. from Sault Ste. Marie (2), Leamington (1), Greely (1), and Prince Edward County (1), Ontario; Hemmingford (1), Quebec; Aweme (6) and Onah (1), Manitoba; Steep Creek (1), Fort Qu'Appelle (1), and Fort A La Corne (1), Saskatchewan; and McMurray (1), Alberta. Host: *Populus* spp. is indicated by labels on specimens.

Oberea pruinosa Csy. Length 13 to 15 mm. Easily distinguished from any other species of *Oberea* by the distinctive color pattern. A small series from the one host in the one locality demonstrates the variability in the peculiar basic pattern on the elytra. Predominantly khaki-colored, specimens have variable dark stripes on the elytra which form an elongate, heart-shaped area from the pale scutellum towards the apex. The elytral apices are rounded, not truncate as in *schaumii*. Records: 9 specimens are in the C.N.C. from Roseland (7), Ontario; Sandusky (1), Ohio; and Medicine Hat (1), Alberta. Host: a small series of adults was collected on seedlings and mature trees of *Populus deltoides* Marsh. at Roseland, Ontario.

Oberea cylindricollis Csy. Length 11 to 14 mm. Closely allied to *schaumii*, this species can be separated by four good characters in the males. The thorax is longer than wide, with the sides parallel; *schaumii* males have the thorax about as long as wide, and the thorax widest at the middle. The elongate basal callosities are twice as large. Along each side of the pronotal median line, below the central callosities, is an angled mat of long hair, not present in *schaumii*. The elytral apices are rounded. Records: 5 specimens are in the C.N.C. from Roseland (4), Ontario; and Willow Spring (1), Illinois. Host: the Roseland specimens were collected on the leaves of *Populus deltoides* Marsh.

Oberea quadricollis Lec. Length 11 to 15 mm. The only western species with which the author is familiar. Resembling *schaumii*, it is separable by its range, west of the Rocky Mountains. Also, the head is always black, the scutellum is always black, and the basal spots on the sides of the pronotum average larger to twice as large in some specimens. There is no suggestion of a pale stripe on the elytra. Records: 22 specimens are in the C.N.C. from Agassiz (3), Creston (1), Vernon (1), Salmon Arm (1),

Revelstoke (1), Royal Oak (1), Diamond Head Trail ((2500 ft.) Garibaldi Park (2)), 7 miles north of Oliver (7), and locality ? (3), B. C. Also, Stinson Creek (1), Mason County, Washington, and Gordon Head (1), Vancouver Island. Host: the two specimens from Garibaldi Park were collected on *Populus trichocarpa* Torr. and Gray.

Oberea canadensis Fisher. Length 8 to 16 mm. Originally described from two males; the paratype was destroyed when it was sent by Mr. Fisher for deposition in the Canadian National Collection. Specimens have been compared with the type by Mr. Haliburton. Records: 15 specimens are in the C.N.C. from Prince Edward County (5), and Hastings County (1), Ontario; Aweme (6), Winnipeg (1) and Lockport (1), Manitoba; and Wenoncha (1), Saskatchewan. Host: the type and paratype were collected on *Salix* by the author at Ojibway, Ontario.

The accompanying plate shows five distinct species of *Oberea*, the only ones known to occur in the Ottawa District. This area is embraced by a circle of thirty-mile radius centered at the Parliament Buildings in Ottawa.

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NEWS

Word has been received that in September of last year, Dr. Kurt Delkeskamp, coleopterist and specialist on African Erotylidae for 31 years at the Zoologisches Museum der Humboldt-Universität in East Berlin, as well as all other scientists of the museum who live in the western zone, have been relieved of their jobs and can no longer even visit the museum.